

The Data Providers panel met in public session on January 9, 2001 and in “private session” on January 10, 2001. Both Sessions were chaired by Dr. Jay Pearlman (TRW). The first session consisted of a series of presentations by the following panel members (in order of presentation): Marshall Faintich (Orbview); Jeff Kerridge (Earthwatch); Gene Colabattisto (SPOT); Vic Leonard (Resource21); and Fred Doyle (Space Imaging). An introduction and summary were given by Jay Pearlman. The presentation material is being collected by the workshop organizers and will be available elsewhere.

Public Forum Overview:

The system cost and data prices must be matched to provide a viable business case. The panel addressed each factor.

Cost –

Costs can be reduced by either (1) a structured prepayment schedule (anchor tenant), (2) the assumption of selected risks or liabilities by the government (such as launch or weather) or (3) the reduction of requirements that are technology or cost drivers. In addition, cost reductions can be achieved through government provided data (such as terrain control points). Further cost reductions can be realized through a long-term stable service (data buy) contract rather than an IDIQ arrangement. With respect to item 3 above, the panel identified the major cost drivers for the data system. These were: (a) thermal infrared band; (b) calibration; and (c) registration of images. The panel also felt that Science users should help in prioritizing requirements, particularly those that are cost drivers. (It is recommended that a prioritization and cost/benefit analysis be undertaken.)

Price –

A majority of the panel recognized that the current Landsat price structure (i.e., data at the cost of fulfilling user requests- COFUR) does not allow capital recapture for the system costs. In general, it was agreed that there is not a viable, stand alone market for 30 m data. Resource21 pointed out that the 30m market can be complementary to a higher resolution market (10m) and that using the 10m data to derive standard 30m data products could be done economically with pricing consistent with a COFUR approach.

Without this complementary market, there are two options for creating a viable price structure. (1) The government buys the data at its true market price and distributes it for COFUR. This is not inconsistent with the current Landsat 7 pricing, since the initial satellite system costs are not captured through data sales; (2) The government gives users money (through increased grant or contract values) to cover the real costs of a dedicated 30 m system.

There were other inputs from the panel which go beyond the price-cost tradeoffs. These relate to working with the government in a commercial or private venture environment.

- In government contacts, the government can act unilaterally. This reduces the value of government commitments when looking for venture capital. The government needs to address the need to establish a long-term commitment if they desire to operate in a “commercial relation” such as a data buy.

- Risk and cost of money may dominate cost. The risks here are, for example, insurable items such as launch failure or on-orbit failure. In traditional government programs, the government covers these risks. In the case of SPOT, which is an industry-government partnership, the government covers these risks. The cost of money is a market driven and, because of its nature, the government has lower rates and better market access. Thus, the government can lower costs through early payments.
- From a data producer viewpoint, the preferred role of the government is as an anchor tenant. As an anchor tenant, the government would not have its traditional detailed oversight role. However, there is recognition that some degree of insight into the design and manufacturing would be desirable on behalf of the anchor tenant. The balance between insight and oversight can have a major impact on the cost of the system.
- The use of the IGS as part of the ground network for the LDCM is interesting, but has international political implications. To maintain its interests in the IGS network, the government may have to provide support to the data producer in formulating and implementing a strategy for incorporation of the IGS. There are many details such as encryption requirements which need to be addressed prior to finalization of the specifications.

The second session was held on January 10 in the afternoon. The participants were: Kevin Patrick (EDC), Bill Stony (Mitretech Systems), Fred Doyle (Space Imaging), Jeff Kerridge (Earthwatch), Vic Leonard (Resource21), Chuck Wende (NASA HQ), Shaida Johnston, NASA GSFC, Fritz Policelli (NASA SSC) and Jay Pearlman (TRW).

The closed session addressed many of the points covered by the presentations given in the public forum. The format of the session was to consider the questions posed by the conference organizers:

1. Which, if any, of the LDCM specifications are most likely to drive the cost of the LDCM system?
2. What changes from the current Landsat 7 system would you propose that could make LDCM more commercially viable? Within the LDCM specification, are there any limiting requirements that preclude commercial viability?
3. How can the Landsat Program evolve into a more fully commercial enterprise?
4. Is there a commercial aspect of the International Ground Station inclusion?

Questions 1 and 2 -

The panel addressed Questions 1 and 2 as a unit. The panel questioned whether priorities had been assigned to the specifications. There was a feeling that performance trades are not understood by science users. For example, the change from having no thermal band to making a strong recommendation for its inclusion appeared to be a change without examining the cost/benefit impact of this change. Another tradeoff raised by Resource 21, but not addressed by the Science Panel, is the trade off between more frequent repeats verses larger angle of observation.

There is a question about which of the specifications are directed at the data supplier and which are to document the desired system performance. A clarification of the expected roles and responsibilities will allow a more realistic response from the data providers.

With respect to the specifications, there is a substantial increase in the performance of the LDCM over Landsat 7. This includes the desire for split bands, the improved geopositioning and the introduction of atmospheric corrections. The panel felt that the primary impacts on cost come from the number of bands, the inclusion of a thermal infrared band and resolution/swath requirements. An unknown is the impact of atmospheric correction. While a cirrus band is specified, is that single band, when combined with the traditional Landsat multispectral bands, sufficient to give comprehensive atmospheric corrections?

The issue of out-sourcing data was raised. For example, are there portions of the data specification that could be acquired from existing commercial sources? This raises the questions of precision interface of data from multiple, non-simultaneous platforms.

With respect to the viability of commercial multispectral systems, both Fred Doyle and Jeff Kerridge presented the view that commercial viability can be achieved through resolution better than 4m. The four-meter multispectral data of Space Imaging Ikonos has not yet been profitable. Vic Leonard disagreed and indicated that Resource21 believes 10m high precision multispectral data will be profitable when focused on the agricultural market. He said his organization is prepared to support the LDCM through synthesis of 30m images using 10m data.

With respect to increased commercial viability, the positive impact of a data buy with a minimum of ten years or more was raised again. Recognizing the benefits of a longer term, stable program, a data buy of at least ten years was strongly recommended by the panel. This could be done as a block buy, similar to what is commonly done by NOAA and the Department of Defense. This combined with advance payments could significantly reduce costs.

The questions of risk assumptions and liability discussed earlier were again raised. Is it appropriate to force the data provider to accept cloud cover risks – that images may have no value due to cloud cover or to require seasonal coverage when certain areas of the earth are cloudy enough that they cannot be imaged even annually on a 16 day cycle?

Question 3 -

In response to moving toward a “fully commercial” Landsat system, Fred Doyle said that the industry must be “de-regulated” so that the full cost of the data can be recognized. At that point, will the customers accept the necessary price and specification compromises? This led to the question of whether the commercial paradigm represents the best overall value to the government. If a primary goal of the system is seasonal images of the globe, is there a commercial driver for this requirement or is it for the good of the government and the country? Who are the real users of Landsat data – both now and in the long term? If they are not the same, then the specifications and commercial development may need to favor the long-term users, which may not be the science community. The current users are dominated by the government (national, state and local). Is there a commercial market

when the major (only) users are government? As an aside, it might be noted that the Aerospace and other industries have done well in an environment where the government is their major customer. Are they commercial?

There were a number of other suggestions addressing long term commercial viability. One was to create a forum for consolidating government data purchases. A second was to implement an education program in the secondary school systems to develop a work force and long term user base.

Question 4 –

An issue was raised as to whether the IGS are partners or customers? Is there an international/government policy/position which will drive the program requirements toward the use of the IGS. Fred Doyle said that access fees which would be paid by the IGS are not sufficient to have the IGS used for Ikonos. The group came to no conclusions about incorporation of the IGS in the LDCM.

Summary

In summary, the data provider panel did not speak with a single voice. There was consensus that there is no viable stand-alone commercial market for only 30m global data sets. Resource21 pointed out that they believe there is a viable 10m market (which can be adapted to the LDCM requirements) while the other providers are addressing much higher spatial resolution. There was a consensus that prioritization of requirements and serious cost-benefit trades could produce a more robust system – from the viewpoint of a commercial data provider. It was strongly recommended that the government make LDCM a procurement covering at least 10 years.